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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,752	03/21/2006	Syuuji Nakamura	27304U	3327

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EXAMINER	
DINH, TRINH VO	
ART UNIT	PAPER NUMBER
2821	

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06/29/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/572,752	NAKAMURA ET AL.	
	Examiner	Art Unit	
	Trinh Vo Dinh	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a response to amendment filed 03/22/2010. Claims 1-10 are pending in which claims 1 and 6 have been amended in view of the amendment. The amendment of claims 1 and 6 necessitate a new ground of rejection as discussed below.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a longitudinal center line" of the coil in claims 1 and 6 must be shown. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6 both recite "*a pattern wire passing through a longitudinal center line of the coil*" which renders the claim indefinite for the following reasons.

a. It is unclear what "pattern wire" means.

b. It is unclear how the pattern wire is arranged relative to the coil. There is no support in the instant specification for the claimed recitation. However, paragraph [0013] of the instant specification discloses "the pattern wire 4a which passes through the coil is formed straightly in parallel to a center line of the coil". Therefore, it is unclear whether the Applicants means the claimed recitation of "*a pattern wire passing through a longitudinal center line of the coil*" as "a pattern wire which passes through the coil formed straightly in parallel to a center line of the coil".

Claims 2-5 and 7-10 are rejected because they depend on the rejected based claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

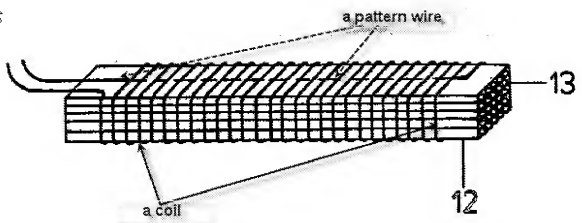
5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama (US 2003/0184489 of record in view of Hein et al (US 2006/0022886) and further in view of Mejia (US 6,400,338 of record).

As to claim 1, Maruyama teaches an embedded door handle antenna comprising

a door handle ("door handle," [0004]),

an antenna embedded in the door handle ("antenna ... inside of a door or a door handle," [0004]), the embedded antenna having a core ("core portion," [0009]) around which a coiled insulation covered conductor is wound ("insulated coating conductive coil," [0030]), wherein the magnetic core contains a flexible magnetic body ("plurality of magnetic ribbons," [0009]) made of soft magnetic material ("amorphous material," [0013], "soft magnetic characteristic," [0035]).

Maruyama does not teach a pattern wire. Hein discloses a pattern wire (in Fig. 3, 6, and 9 or the below drawing) passing through a longitudinal center line of a coil (4 in Fig. 3, or the below drawing). It would have been obvious to one having ordinary skill in the art to wind Maruyama's coil with a pattern wire arranged to pass through a longitudinal center line of the coil as disclosed by Hein in order to avoid adversely affect the electrical and magnetic properties (Hein: [paragraph [0057]). Claim 1 further recites "the pattern wire configured such that linkage with respect to the magnetic flux at the coil is prevented". Hein discloses the same structural configuration as the claimed invention. Therefore, although not explicitly stated in Hein, the pattern wire of Hein would be configured such that linkage with respect to the magnetic flux at the coil is prevented as claimed.



Further, Maruyama as modified by Hein does not teach the magnetic core and a wiring layer which are laminated on each other. Mejia teaches an embedded antenna having a core (12, Fig. 9A) around which an insulation covered conductor (22, Fig. 9A) is wound, wherein the core comprises a magnetic core ("ferrite," col. 5, line 24) and a wiring layer ("metallization layers," col. 5, lines 7-9, 26, Fig. 9A) which are laminated to each other. It would have been obvious to one of ordinary skill in the art to modify the antenna module of Maruyama as modified by Hein by providing a wiring layer directly on the magnetic core body as taught by Mejia so that an additional separate printed circuit board is not necessary, thus simplifying assembly and miniaturizing the antenna module.

As to claim 6, Maruyama teaches an embedded door handle antenna, comprising: a door handle having a hollow portion therein ("door handle," [0004]); an antenna embedded within the hollow portion of the door handle ("antenna...inside of a door or a door handle," [0004]), the embedded antenna comprising a flexible magnetic core ("core portion,"[0009]) containing a flexible magnetic body ("plurality of magnetic ribbons," [0009]) made of soft magnetic material ("amorphous metal," [0013], "soft magnetic characteristic," [0035]), around which an insulation covered conductor is wound ("insulated coating conductive coil," [0030]); the connector

facilitating connection of the embedded antenna to a power circuit ("condenser," i.e. a capacitor which can store energy, [0030]), wherein the embedded antenna is energized by an action of at least one of request switch ("when it receives an ID code from the electric key, the system unlocks," [0003]) and a proximity of a keyless entry component ("when a person with an electric key approaches to the opening and closing portion, the system becomes a reception standby mode,"[0003]). Maruyama does not teach a pattern wire; Hein discloses a pattern wire as discussed in claim 1 above.

However, Maruyama as modified by Hein does not teach the flexible magnetic body laminated to a wiring layer. Mejia teaches a wiring layer ("metallization layers," 26, Fig. 9A) laminated to the magnetic core (12, Fig. 9A) of an antenna. It would have been obvious to one of ordinary skill in the art to modify the antenna module of Maruyama by providing a wiring layer directly on the magnetic core body as taught by Mejia so that an additional separate printed circuit board is not necessary, thus simplifying assembly and miniaturizing the antenna module.

As to **claims 2 and 7**, Mejia teaches the wiring layer is a printed circuit board (a printed circuit board is understood as a mechanical support for electronic components that provides conductive paths to electrically connect the components).

As to **claims 3 and 8**, Mejia teaches the core is provided with an extending portion (18, Fig. 9A) which outwardly extends from a coiled section (16, Fig. 9A) around which the insulation covered conductor is wound, and an electronic component (14, 28, Fig. 9A) is mounted on the extending portion.

As to **claim 4 and 10**, Mejia teaches an electricity control section ("integrated circuits," col. 6, lines 1-21, 14, Fig. 9A) which permits and prohibits energizing the wiring layer depending upon an operation state of the embedded antenna.

As to **claims 5 and 9**, Mejia in view of Maruyama teach the embedded antenna substantially as claimed as applied to claim 3 above, but fails to teach the electronic component is a light emitting diode. Light emitting components are well known in the electrical art, and one of ordinary skill in the art could have added an LED to the antenna module of Mejia without departing from the scope of the invention. One of ordinary skill in the art would be motivated to add and LED to the antenna module to provide a visual cue for indicating the state of the antenna system. Such a modification would provide no change in the function of the antenna module, and the combination would have yielded predictable results to one of ordinary skill in the art.

Response to the arguments

6. Applicant's arguments with respect to amended claims 1 and 6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821 and email address is trinh.dinh@uspto.gov. The examiner can normally be reached on IFW (Increase Flexible Work). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 27, 2010

/Trinh Vo Dinh/
Primary Examiner, Art Unit 2821